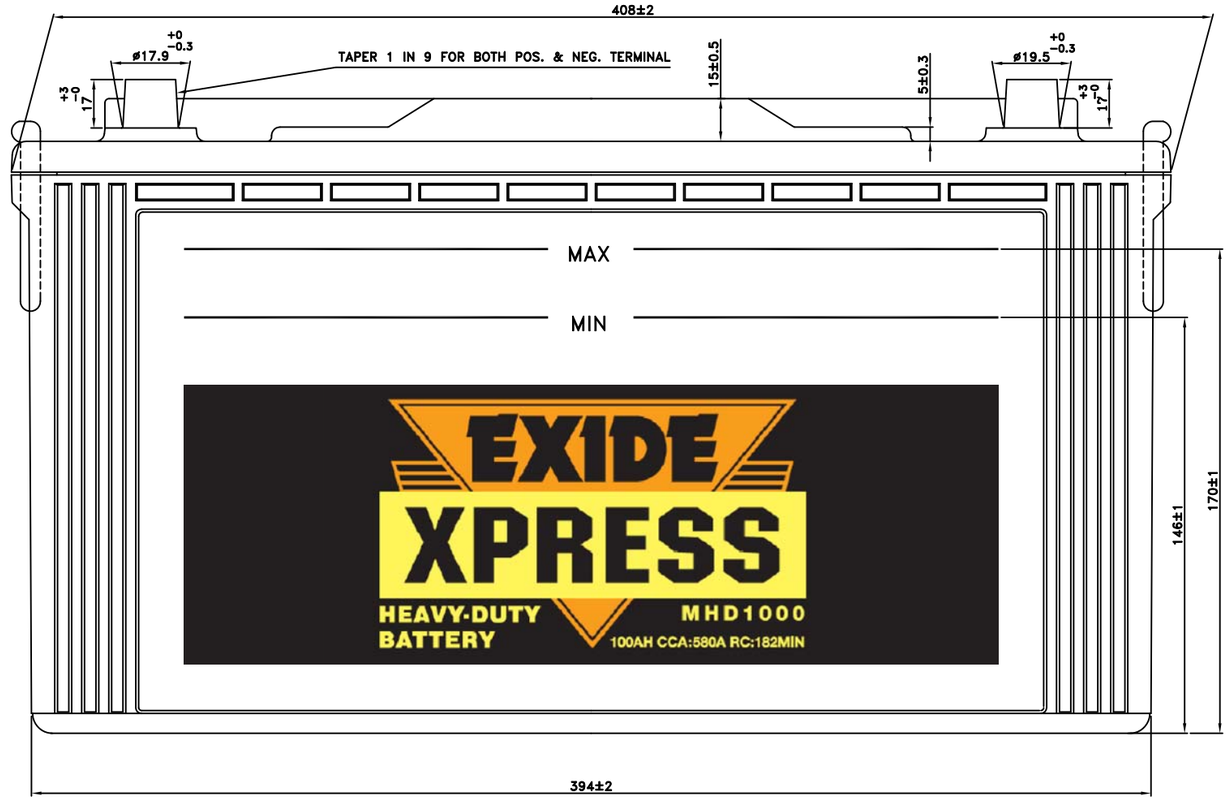
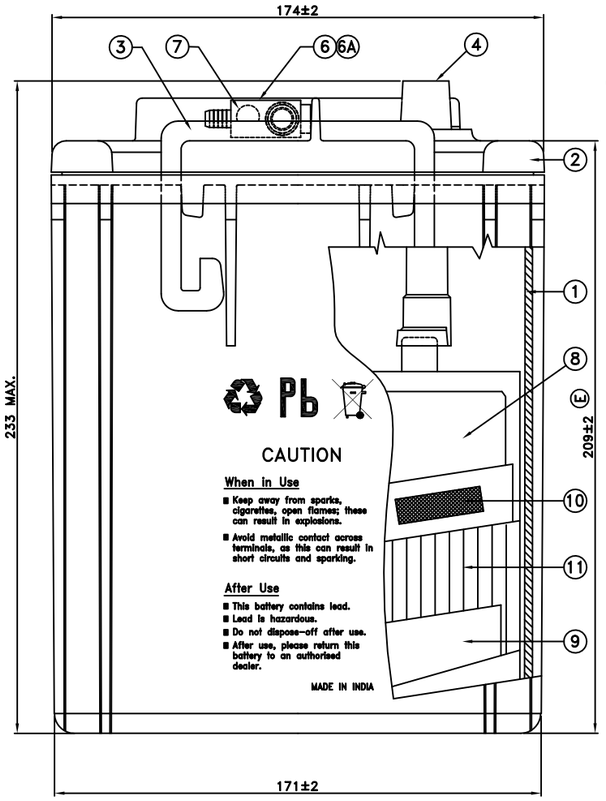
DO NOT SCALE



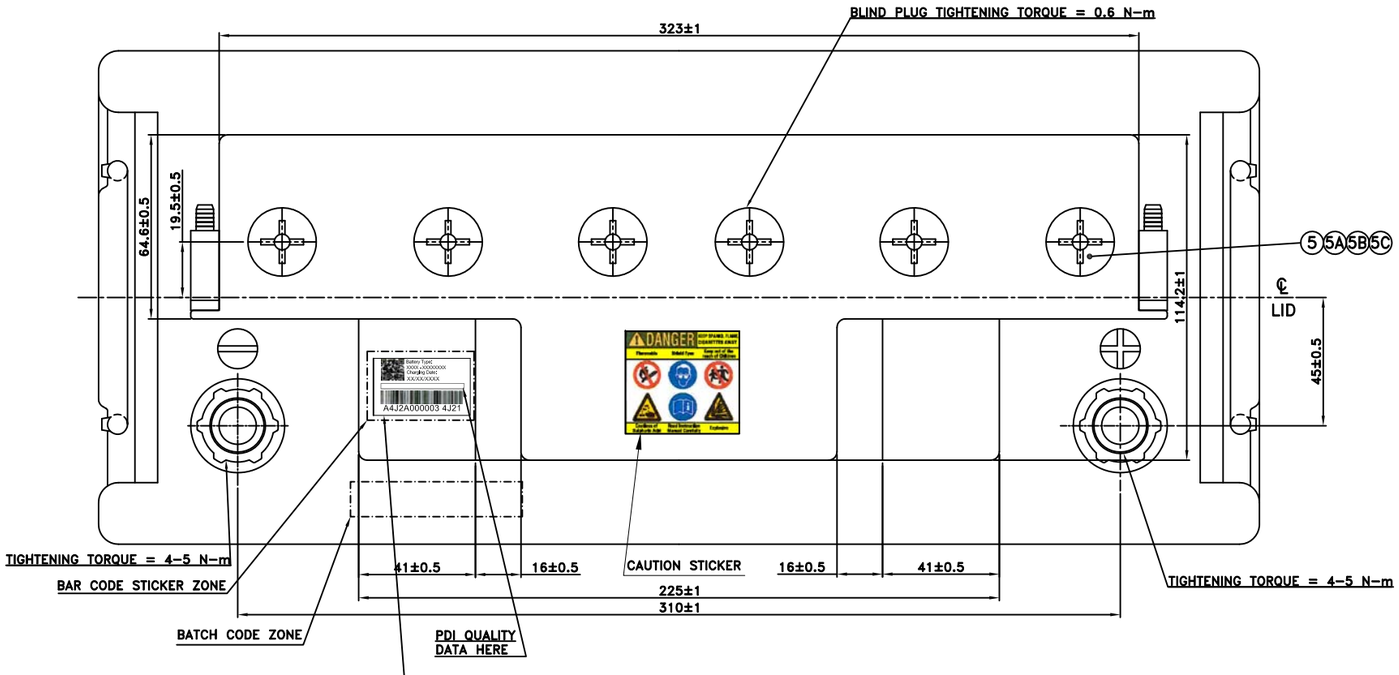


PERFORMANCE SPECIFICATIONS

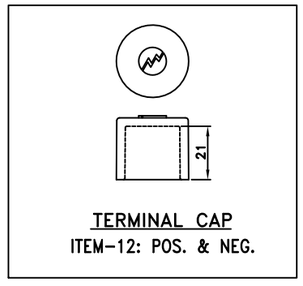
	ITEM	SPECIFICATION	CONDITIONS	STANDARD
	NOMINAL VOLTAGE			12 V
Ⓐ	CAPACITY	JIS D5301 : 1999	5 HOUR RATE	80 AH (MIN)
		REFERENCE	20 HOUR RATE	100 AH
	HIGH RATE DISCHARGE	JIS D5301 : 1999	300 AMPS −15°C	30 SEC VOLTAGE ⩾ 9V DURATION TO 6V ⩾ 4 MIN.
	CHARGE ACCEPTANCE	JIS D5301 : 1999	14.4 V, 0°C	15 A (MIN)
	COLD CRANKING AMPERES	SAE J537 : 1994	580 AMPS −18°C	30 SEC VOLTAGE ⩾ 7.2V
	RESERVE CAPACITY	SAE J537 : 1994	25 A, 27°C	182 MIN
	HEAVY LOAD ENDURANCE	JIS D5301 : 1999	40°−45°C	415 CYCLES (MIN)
	WATER LOSS	JIS D5301 : 1999	14.4 V, 40°C	⩽ 2 gm/AH AFTER 500 HOURS
	VIBRATION RESISTANCE VERTICAL SHM STEP 1 : 6g, 33Hz FOR 12 MIN. STEP 2 : 4.3g, 33Hz FOR 3 HRS. STEP 3 : 3g, 25Hz FOR 4 HRS. DURING VIBRATION TEST THE BATTERY TO BE SUBJECTED TO THE LIGHT LOAD ENDURANCE TEST AS PER JIS D5301 METHOD AT AMBIENT TEMPERATURE	EIL SPEC.		NO SUDDEN DROP OF VOLTAGE NO LEAKAGE OF ELECTROLYTE NO VISIBLE DAMAGE OF EXTERNAL PARTS
	TILT TEST	M&M SPEC.	TILT AT 90° ON ALL FOUR SIDES FOR 15 MINS WITH REST PERIOD FOR 10 MIN IN UPRIGHT POSITION BETWEEN SUCCESSIVE TILT	NO ELECTROLYTE SPILLAGE OBSERVED
	FILLED WEIGHT			27.7 kg ± 3%
	DRY WEIGHT			19.9 kg ± 3%
	ELECTROLYTE VOLUME			6.3 LITRES (APPROX)
	TEST GRAVITY OF ELECTROLYTE			1.280±0.010 AT 20°C
	RECOMMENDED SERVICE GRAVITY			1.240±0.010 AT 27°C

NOTES

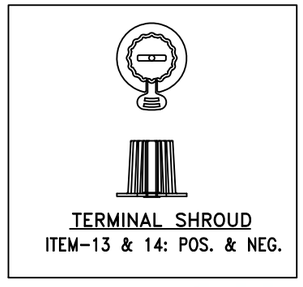
1) ALL PERFORMANCE & DURABILITY SPECIFICATION AS PER JIS:D5301−1999.
2) BATTERY SUPPLIED IN READY TO USE CONDITION (FACTORY CHARGED).
3) THE OPEN CIRCUIT VOLTAGE OF THE BATTERY PRIOR TO FITMENT IS 12.3V.
4) STENCIL COLOUR SCHEME
   FRONT/BACK PANEL: COMBINATION OF YELLOW, ORANGE & BLACK.
   SIDE PANEL: BLACK.
5) LIFTING HANDLE IS CAPABLE OF WTHSTANDING LOAD OF 3 TIMES OF BATTERY WEIGHT FOR 24 HOURS.
6) OCV VS SOC CURVE AS GIVEN IN TECHNICAL SPECIFICATION SHEET REFERENCE NO. TS.58.0/12(14).
7) SOC CURVE WITH INTERNAL RESISTANCE AT DIFFERENT TEMPERATURE AS GIVEN IN TECHNICAL SPECIFICATION SHEET REFERENCE NO. TS.59.0/12(14).
8) SELF DISCHARGE CURVE AS GIVEN IN TECHNICAL SPECIFICATION SHEET REFERENCE NO. TS.60.0/12(14).
9) BATTERY INSTALLATION GUIDELINES [EIL/R&D/AUTO/BMCA−10.0/12(14)] TO BE FOLLOWED.
10) BRAND NAME PRINTING IN BOTH THE SIDES.



BAR CODE STICKER MATERIAL VINYL/BOPP & ACID/THERMAL RESISTANT ADHESIVE



TERMINAL CAP
ITEM−12: POS. & NEG.



TERMINAL SHROUD
ITEM−13 & 14: POS. & NEG.

SL.NO.	ITEM	MATERIAL
1	CONTAINER	TRANSLUCENT WHITE, PP−CP
2	LID	BLACK, PP−CP
3	LIFTING HANDLE	BLACK, PC
4	TERMINALS (POS/NEG)	LEAD ALLOY
5	COIN FLUSH FILLING PLUG	BLACK, PP−CP
5A	'O' RING	NEOPRENE RUBBER
5B	PLUG TOP	BLACK, PP−CP
5C	PLUG BOTTOM	WHITE, PP−CP
6	ELBOW VENT NOZZLE	BLACK, HDPE
6A	MICROPOROUS FILTER DISC/ SPARK ARRESTOR	WHITE, CERAMIC
7	VENT STOP	BLACK, PP−CP
8	POSITIVE PLATE	LEAD/1.65% Sb ALLOY
9	NEGATIVE PLATE	LEAD/LEAD CALCIUM ALLOY
10	GLASSMAT	GLASS MICROFIBRE
11	ENVELOPE	POLYETHYLENE
12	TERMINAL CAP − POS./NEG.	BLACK, PP
13	TERMINAL SHROUD − POS.	RED, LDPE
14	TERMINAL SHROUD − NEG.	BLACK, LDPE

BATTERY TYPE	: LEAD ACID BATTERY
CUSTOMER	: M&M
CUSTOMER PART NO	: E007703136C91
VEHICLE PROGRAM	: M−STAR SNB/ROW

ENGRAVED BATCH CODE DETAILS

11 DIGIT BATCH CODE COMPRISING OF :−
BATTERY TYPE (1ST DIGIT) : ALPHA MODE [A (AUTOMOTIVE) OR M (MOTORCYCLE)].
FACTORY CODE (2ND DIGIT) : NUMERIC MODE (1, 2, 3, ETC.).
MANUFACTURING MONTH CODE (3RD DIGIT) : ALPHA MODE (A TO L FOR JAN−DEC).
MANUFACTURING YEAR CODE (4TH DIGIT) : NUMERIC MODE (LAST DIGIT OF THE YEAR).
ASSEMBLY LINE CODE (5TH DIGIT) : ALPHA MODE (A TO L FOR AUTOMOTIVE LINES & M TO Z FOR MOTORCYCLE LINES).
BATTERY SERIAL NO. (6TH TO 11TH DIGIT) : NUMERIC MODE (123456).

BAR CODE STICKER DETAILS

15 DIGIT BATTERY CODE COMPRISING OF :−
BATTERY BATCH CODE (1ST TO 11TH DIGIT) : SAME AS ENGRAVED BATCH CODE.
CHARGING FACTORY CODE (12TH DIGIT) : NUMERIC MODE (1, 2, 3, ETC.).
MONTH OF CHARGE (13TH DIGIT) : ALPHA MODE (A TO L FOR JAN−DEC).
YEAR OF CHARGE (14TH DIGIT) : NUMERIC MODE (LAST DIGIT OF THE YEAR).
WEEK OF CHARGE (15TH DIGIT) : NUMERIC MODE (1, 2, 3, ETC.).
IN ADDITION TO ABOVE, CHARGING DATE, PDI QUALITY DATA (FOR e.g. OCV) IS ALSO INCLUDED IN THIS STICKER.

LEVEL-2
Mahindra & Mahindra Ltd.
Tractor Division, Chennai-603 204.
Approved by :Dhirendra Singh
Date : 05/02/2015
Part No: E007703136C91
C/L AB
ER No. ECN15P020186

REV. NO.	REVISIONS	DATE	REV BY	CKD BY	APD BY
A	20 HOUR CAPACITY INCORPORATED IN SPECIFICATION TABLE.	05.01.15	A.M	A.R	G.M

	NAME	SIGN.	DATE
DRN.BY	A.M		31.12.14
CKD.BY	A.R		31.12.14
APD.BY	G.M		31.12.14
TRD.BY			

ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED

GENERAL TOLERANCE (mm) UNLESS OTHERWISE SPECIFIED

BEYOND (>)	(⩽) BELOW	TOLERANCE (±)
0	1	0.05
1	6	0.1
6	30	0.2
30	80	0.3
80	300	0.5
300	600	0.8
600	1000	1.0

TITLE
OUTLINE DRG. OF MHD1000 BATTERY FOR M&M

EXIDE INDUSTRIES LTD.
R & D CENTRE
EXIDE

SCALE : 1 : 1

DRG. NO.: BA21376A

DATE OF ISSUE